

I claim:

1. An improved stud of the type attached to a furnace wall or boiler tube comprised of a cylindrical body having a top, a bottom and a side wall extending from the top to the bottom, wherein the improvement comprises a plurality of projections extending from the top of the stud, the projections sized and configured to form a heat sink.
2. The improved stud of claim 1 also comprising a diffusion coating applied to the projections.
3. The improved stud of claim 2 wherein the diffusion coating contains at least one of chromium, aluminum, nickel, silicon, boron, rhenium, zinc and carbides, nitrides and oxides thereof.
4. The improved stud of claim 1 also comprising a corrosion resistant or erosion resistant coating applied to at least a portion of the body of each stud.
5. The improved stud of claim 1 wherein the plurality of projections are formed by a series of cross cuts on the top of the stud.
6. The improved stud of claim 1 wherein the side wall is comprised of a plurality of grooves extending from the top toward the bottom of the cylindrical body.

7. The improved stud of claim 1 wherein the body has a cross-sectional shape selected from the group consisting of a circle, an oval and a polygon.

8. An improved furnace of the type having studs attached to a wall of the furnace wherein the improvement comprises at least some of the studs comprised of a cylindrical body having a top, a bottom, a side wall extending from the top to the bottom, and a plurality of projections extending from the top of the stud, the projections sized and configured to form a heat sink.

9. The improved furnace of claim 8 also comprising a diffusion coating applied to the projections.

10. The improved furnace of claim 9 wherein the diffusion coating contains at least one of chromium, aluminum, nickel, silicon, boron, rhenium, zinc and nitrides and oxides thereof.

11. The improved stud of claim 8 also comprising a corrosion resistant or erosion resistant coating applied to at least a portion of the body of each stud.

12. The improved stud of claim 8 wherein the plurality of projections are formed by a series of cross cuts on the top of the stud.

13. The improved stud of claim 8 wherein the side wall is comprised of a plurality of grooves extending from the top toward the bottom of the cylindrical body.

14. An improved replacement panel for a furnace or boiler of the type having studs attached to a surface of the panel wherein the improvement comprises at least some of the studs comprised of a cylindrical body having a top, a bottom, a side wall extending from the top to the bottom, and a plurality of projections extending from the top of the stud, the projections sized and configured to form a heat sink.

15. The improved replacement panel of claim 14 also comprising a diffusion coating applied to the projections.

16. The improved replacement panel of claim 15 wherein the diffusion coating contains at least one of chromium, aluminum, nickel, silicon, boron, rhenium, zinc and carbides, nitrides and oxides thereof.

17. The improved replacement panel of claim 14 also comprising a corrosion resistant or erosion resistant coating applied to at least a portion of the body of each stud.

18. The improved replacement panel of claim 14 wherein the plurality of projections are formed by a series of cross cuts on the top of the stud.

17. The improved replacement panel of claim 14 wherein the side wall is comprised of a plurality of grooves extending from the top toward the bottom of the cylindrical body.

18. An improved boiler of the type having studs attached to a wall of at least one boiler tube wherein the improvement comprises at least some of the studs comprised of a cylindrical body having a top, a bottom, a side wall extending from the top to the bottom, and a plurality of projections extending from the top of the stud, the projections sized and configured to form a heat sink.

19. The improved boiler of claim 18 also comprising a diffusion coating applied to the projections.

20. The improved boiler of claim 19 wherein the diffusion coating contains at least one of chromium, aluminum, nickel, silicon, boron, rhenium, zinc and carbides, nitrides and oxides thereof.

21. The improved boiler of claim 18 also comprising a corrosion resistant or erosion resistant coating applied to at least a portion of the body of each stud.

22. The improved boiler of claim 18 wherein the plurality of projections are formed by a series of cross cuts on the top of the stud.

23. The improved boiler of claim 18 wherein the side wall is comprised of a plurality of grooves extending from the top toward the bottom of the cylindrical body.